Department of
Veterans Affairs

VHA PROGRAM GUIDE 1850.1

RECYCLING PROGRAM

Environmental Management Programs Office
Veterans Health Administration
Washington, DC

FOREWORD

The Federal government, as the single largest consumer in the nation, should be a visible and active leader in solving our nation's solid waste dilemma. By implementing Executive Order 12873, Veterans Health Administration (VHA) can assume a leadership role in the field of waste reduction, recycling and affirmative procurement. This program is an integral and defining part of the mission of Environmental Management Programs Office.

This document is to be a guide in establishing program responsibility for recycling and to provide some measure of information and guidance to assist in establishing an effective recycling program at each Department of Veterans Affairs (VA) medical center.

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RECYCLING PROGRAM GUIDE

1. RESPONSIBILITY

The Office of Facilities Management, Environmental Management Programs Office is assigned responsibility for establishment, development and promotion of recycling programs in Veterans Health Administration (VHA).

a. These programs are required to foster:

(1) Practices that reduce waste generation;

(2) The recycling of appropriate materials; and

(3) Purchasing recycled content products.

b. Purchasing of recycled products should be consistent with applicable State and local requirements.

c. Recycling is but one element of the larger management scheme entitled, Waste Minimization, which encourages action in an environmentally responsible manner. The three elements, or the three Rs, of waste minimization are Reduce, Reuse and Recycle.

2. AUTHORITY

a. The Resource Conservation and Recovery Act (RCRA), enacted October 21, 1976, establishes the Federal Government as the leader to stimulate markets for recyclable materials and the use of recycled products nationally.

b. Executive Order 12873, dated October 20, 1993, and Public Law (Pub. L.) 103-329, require that each Federal agency initiate a program to promote cost-effective waste prevention and recycling of reusable materials in all of its operations and facilities. The Executive Order (E.O.) directs Federal agencies to accelerate their purchase and use of recycled content products.

c. VA Directive 0052, Affirmative Procurement Program for Products Containing Recovered Materials, outlines recycling, waste prevention and affirmative procurement programs in the Department of Veterans Affairs (VA).

3. INITIATIVES AND INCENTIVES

a. Buying recycled products can significantly increase demand for recycled content products, increase the market for recyclables, and increase collection and recycling of waste products. This is what "closing the loop" on recycling means.

b. Manufacturers of consumer products are recycling impressive amounts of readily reusable products. About 25 percent of the nation's newspapers, office paper, cardboard, aluminum, glass, and steel containers are being recycled. ***NOTE:*** *As consumer demand increases for recycled goods and packaging, so will the amounts of aluminum, paper, steel, glass and plastic being recycled.*

c. VHA must demonstrate the importance of recycling to manufacturers by purchasing items made of or packaged in recycled materials. With emphasis on buying recycled products through General Services Administration's (GSA's) Recycled Products Guide and other sources, manufacturers will continue to buy and use recyclable materials.

d. Public Law 103-329 Section 608, authorizes the receipt and distribution of funds realized from the sale of recyclables. These revenues are to be used within the framework of the law, but generally are distributed as follows:

(1) For acquisition, waste reduction and prevention, and recycling programs as described in E.O. 12873.

(2) Other Department Environmental Management Programs, including, but not limited to, the development and implementation of Hazardous Waste Management Programs and Pollution Prevention Programs.

(3) Other relevant employee programs as authorized by law or as deemed appropriate by the facility Director.

4. INITIATING A RECYCLING PROGRAM

The following suggestions are helpful steps for initiating the healthcare facility Recycling Program:

a. **Accomplish a Waste Audit**. In order to determine recycling potential in each department of the medical center, a waste stream audit is essential. The benefits of a thorough review of the waste stream on a departmental level is the key to conducting a successful program. This helps determine what materials are in sufficient volume to justify recycling. This may be accomplished with a survey distributed to each employee soliciting information on types of waste they generate, locations of waste, suggestions for reduction and their willingness to participate in a Recycling Program. The information gathered will assist in establishing goals for cost containment initiatives, as well as waste minimization.

b. **Decide which Recyclables to Collect**. Deciding which types of materials to recycle is important, for there are many choices and market issues to consider. Materials typically recycled are white paper, computer paper, wood pallets, aluminum cans, cardboard, plastics, precious metals and even coffee grounds.

c. **Identify Local Markets for Recyclables**. To find markets for the recyclables check the yellow pages. If an area government already collects some materials and has a local municipal or

county recycling coordinator, that person can identify markets. Another contact is the State Recycling Offices (see App. D).

d. **Select the Type of Recycling Program to Implement**. One option is to set-up an in-house program. With this option there is total control and total responsibility for establishing the program, collection and storage of recyclable materials and arranging for its pick-up or delivery with a recycler. Another is to contract through a local waste handling company that offers a recycling program. This option may simplify things. The advantages to both options and other alternatives available in a geographic area or medical center circumstance need to be weighed before selecting the most appropriate plan.

e. **Consider Man-Hours, Equipment, Supplies, Container Requirements and Anything Else that will Impact on the Recycling Program.** Reduce labor costs by using paid incentive therapy patients or a local non-profit rehabilitation business' employees to collect recyclables.

f. **Establish a Successful and Smoothly Running Program by Organizing a Coordination Team and Naming a Chairperson**. A coordination team will help the program to be successful and run smoothly by getting more employees involved. In addition to being responsible for program planning, publicity and operation, the team makes recycling fun. The team needs to include enthusiastic individuals from services affected by the program and by services that are large generators of waste. Designating individuals to these positions provides others with a sense of continuity for the program, that recycling is "real" and responsibilities for it are specifically delegated.

g. **Establish a System for Collecting Recyclables**. The collection system needs to be as simple and organized as possible. Acquire and label appropriate containers and designate logical deposit locations for ease of separation. Consider using containers that are fire-rated, and appropriate for the item being recycled.

h. **Advertise the Program.** Publicity is essential to the success of a recycling program. Develop a medical center memo establishing the recycling program; and then send out informational flyers, use display posters and speak to each service about the program. Consider adopting a mascot or having a contest to select one to help promote the recycling program. Top management backing and support is essential to a successful program, so ask your medical center Director to help kick-off the program. Provide regular feed-back on the program’s success to all employees, local news services and VHA Headquarters Environmental Management Program Office.

i. **Pilot Program**. It may be advisable to initiate a pilot program in a small area to try out the container selection, location, type and availability to the users. Collect feed-back from the trial area users and integrate these findings in the hospital-wide plan.

j. **Maintain Records to Demonstrate Program Growth and Commodity Diversity**. The Annual Waste Minimization Survey outlines data needs and illustrates records content.

5. EMPLOYEE EDUCATION

Critical actions in educating staff and developing continued momentum for a recycling program are to:

a. **Begin Education Early**. Start the education process along with the design of a Recycling Program. The act of recycling requires a change of habit, so "the sooner the better" in getting the message to those affected. Notification to each employee or posters placed at visible locations are a good introduction to what is coming.

b. **Encourage Participation with Activities**. Initiate promotional activities that encourage participation of staff in task-oriented activities such as:

(1) A poster and slogan contest for the recycling program.

(2) A contest to guess the number of pounds of paper in a barrel with a prize for the closest guess.

(3) A recycling trivia quiz concerning the amount of natural resources being saved by recycling.

(4) A recycling kick-off event where the medical center recycling mascot meets the employees.

c. **Emphasize the Positive**. Focus on the positive effects of recycling (conserving natural resources, landfill space and energy) when communicating with employees. This encourages recyclers to feel good about their participation instead of viewing recycling as one more "task to perform." Training tools and recycling facts and information are available from the Environmental Protection Agency (EPA) and your state's recycling office. ***NOTE:*** *See Appendix D for State recycling offices.*

d. **Education Participants**. Hold short educational sessions while distributing recycling containers in each area of the medical center to teach employees what goes where for recycling. Introduce the recycling coordinator for each area so that employees will know who they can approach for answers to any questions that they may have. Emphasize the positive benefits of recycling and that the medical center is joining a state-wide/global effort to conserve resources. Helpful hints on recycling can be printed directly on collection containers, as well as on posters placed around the medical center.

e. **Communicate Recycling Results to Encourage Continued Participation**. Provide the results of recycling (e.g., number of tons diverted from the waste stream which in turn saved xx number of trees, etc.) to employees on a regular basis. Print the information in a medical center newsletter or on posters placed in central locations around the medical center. This follow-up activity reinforces the good feeling that recycling can bring environmental rewards for the effort that is being made. Positive reinforcement of this type is much more effective than trying to manage change through enforcement.

6. SUGGESTIONS ON WASTE REDUCTION AND RECYCLING

Although recycling is an important part of solid waste management, the best approach to decreasing the costs of disposal is to reduce waste generated by the medical center. Keep in mind that the focus needs to be on reviewing all products with potential for recycling or reuse in a medical center environment. Small changes in procedures and purchases can have significant impact on reducing the amount of waste that requires recycling or disposal. A few suggestions follow:

a. **Procedures**

(1) Make double-sided copies whenever possible. This can cut your paper waste dramatically and will reduce the amount of paper purchased.

(2) Instead of making individual copies for everyone, use a routing slip when circulating information to employees, or post notices on bulletin boards in central locations.

(3) Use reusable envelopes for interoffice mail.

(4) At medical centers that are computerized, use electronic mail instead of making hard copies of communications to employees.

(5) Limit the number of subscriptions to periodicals and require employees to share them; this will reduce both waste and subscription costs.

(6) Include in copier contracts the requirement to have the vendor collect and recharge empty laser printer toner cartridges. Such cartridges can be recharged several times, saving money and disposal space.

(7) Encourage employees to reuse paper clips, rubber bands, and metal fasteners. These must be removed before recycling white paper anyway.

(8) Use scrap paper for phone messages. If access to a wax binder is available, scrap paper pads for the facility can be made.

(9) Require suppliers who deliver products on pallets or in metal drums to take them back or exchange them on a one-for-one basis. Other alternatives may be to ship them to depot, sell them, or donate them to local charitable organizations. ***NOTE:*** *Donating to charitable organizations provides a positive public image for the medical center.*

b. **Purchases**

(1) Replace single-strike film typewriter ribbons with ink impregnated nylon multistrike ribbons. The multistrike ribbons last six to ten times as long as the single strike variety. Do the same for printers that can utilize multistrike ribbons.

(2) Replace disposable ball-point or felt tip pens with ones that take refills.

(3) Do not purchase envelopes with cellophane windows or self-adhering note pads. The cellophane windows and sticky backing are contaminants in paper recycling. If windows are necessary, purchase the ones which have no covering over the window.

(4) Purchase reusables rather that single-use disposable products.

(5) Encourage the use of washable crockery and utensils where feasible.

(6) Buy large sizes of cleaning supplies and repackage into smaller, reusable dispensers.

(7) Purchase paper products made from recycled paper whenever the situation allows.

c. **Other Recycling Considerations**

(1) In addition to office paper, corrugated cardboard and plastics addressed later in this guide the following are some potential recycling areas to be considered:

(a) Fats, oils, and greases from food service areas. ***NOTE:*** *Coffee grounds can be used in grounds maintenance.*

(b) Reclaimed silver from radiology.

(c) Pallets can be reused or recycled.

(d) Return plastic containers, pails or metal drums to vendors for discounts or sales.

(e) Recycle motor oil, scrap metals, wood and acid lead batteries (see App. F).

(f) Glass, newspapers, telephone books and aluminum cans.

(g) Chemicals like alcohol, xylene and acetone can be collected and recycled. ***NOTE****: This requires a distillation unit.*

(h) Foam chips and other materials used in packaging can be reused and/or recycled.

(i) Composting of grass and garden clippings for use in grounds maintenance.

(2) Products that cannot be recycled at this time (due to lack of a market), but may be in the future include draft folders, bound magazines, periodicals, and books. ***NOTE****: The latter three could possibly be donated to local schools or libraries.*

7. RECYCLABLE MATERIALS

a. **Corrugated Cardboard**

(1) Scope. Corrugated cardboard represents a significant percentage of solid waste generated. By recycling corrugated cardboard, instead of discarding it, landfill space will be conserved and there will be a saving of refuse tipping fees. Recycling of corrugated containers is easy and simple to implement. It involves:

(a) Source separation from the refuse stream.

(b) Baling to improve ease of handling.

(c) Storage.

(d) Pick-up by or delivery to a paper processor.

(2) Methods. There are several possible methods for handling corrugated cardboard. Storage facilities must be easily accessible to medical center personnel and haulers, and must comply with fire codes.

(a) Corrugated boxes should be opened and flattened (not necessary with a baler) and contaminants removed before being placed in the compactor or storage container. Once the contaminants are removed, your system for handling the corrugated cardboard may be as simple as placing the loose flattened corrugated pieces into a dumpster.

(b) Other options include manually bundling, mechanically baling or compacting the corrugated cardboard in preparation for pick-up or delivery.

(3) Baling

(a) Small medical centers that generate only minimal amounts of corrugated cardboard may find it more economical to manually bundle or store the loose corrugated pieces in an appropriately sized container and have it collected either by a municipality or contracted hauler. A medical center may choose to use its own vehicles, and have the corrugated cardboard delivered to a private or municipal drop-off site. ***NOTE:*** *It can be very labor intensive to manually flatten and bundle cardboard.*

(b) For medical centers generating larger quantities of corrugated cardboard, the decision to bale or compact and the choice of bale size needs to be made on a case-by-case basis. Both baling and compacting improve ease of handling. By compressing the material, storage space requirements are reduced (consider the size of the baling and compacting equipment when assessing the affect on storage requirements). Allowing greater quantities to be carried per haul, reduces hauling costs if the medical center has to pay for pick-up.

(c) Compactors are usually more expensive than balers and many require a lot more space than most balers. Quality control tends to be better with balers than compactors because more attention is paid to the materials being placed into the baler. However, many of the smaller balers and some of the more inexpensive larger balers require hand tying of the bundles. Due to the size of the feeding chamber on some balers it may be necessary to cut the corrugated cardboard to fit it into the baler.

(d) Baled corrugated cardboard can be worth more per ton than loose or compacted corrugated; however, bales smaller than "mill size" (at least 1000 lbs.) must be broken open and relabeled by the paper processor, thus reducing the market value.

(4) Considerations. When making decisions about recycling, consider:

(a) The relative labor requirements of the various methods.

(b) The quantity of corrugated cardboard generated.

(c) Type and amount of available storage space.

(d) Space requirements for the different types of storage and/or processing equipment.

(e) Comparative costs of leasing or buying a baler, compactor, dumpster or trailer.

(f) Hauling arrangements (including price per haul).

(g) Markets for the corrugated cardboard (i.e., paper processor or directly to a mill).

(h) Distance from a market.

(i) Market value of the corrugated cardboard.

(5) Determining Appropriate System. Contact a paper processor, hauler or recycling company to help determine the system appropriate for the facility. ***NOTE:*** *See Appendix E for a listing of waste recovery associations.*

(a) The paper processor will help make the final determination regarding which materials are acceptable and those that are unacceptable.

(b) Typical unacceptable items are:

1. Packing material such as polystyrene foam pellets.

2. Excessive amounts of plastic tape or plastic packing envelopes (small amounts do not have to be removed).

3. Wood stapled or other-wise attached to the corrugated cardboard.

4. Non-paper insulation layer between the layers of corrugated.

5. Metal (generally, small numbers of staples do not have to be removed).

6. Wax or plastic coated corrugated (usually used to pack produce, normally darker and shinier than uncoated corrugated).

7. Other extraneous materials as material stored in boxes, sweepings, etc.

8. Asian corrugated is not acceptable for most recycling purposes at this time. Asian corrugated can be distinguished by its yellow/green tinge (usually used for products shipped from Asia).

b. **Office Paper**

(1) It has been determined that the typical administrative worker throws away at least 1/2 pound of paper during each work day (that's more than 125 pounds per worker per year). The recovery of just 1 ton of paper saves 17 trees, diverts 96 gallons of water from the pulping process and reduces (by the equivalent of 2 1/2 barrels of oil) the energy that's required to make paper from virgin materials. Office paper recycling obviously makes good environmental sense. Large volumes of office paper can be collected from areas throughout the medical center. Computer paper waste can be gathered and recycled; confidential records and reports must be shredded and recycled; all other white paper can be collected. If it is decided to segregate office paper waste, the separation must be clearly defined as follows:

(a) Computer paper. Generally a higher grade white paper that has tracked edges. This paper has a higher value than other white paper.

(b) Commingled White paper. All other white paper including typing paper, laser printer paper, tablet paper, note paper and copy machine paper.

(c) Mixed. All paper of any grade, texture or color.

(2) As with any other recycling effort recycling coordinators must develop a collection system, choose containers, conduct staff training and coordinate their effort with all involved staff. In implementing paper recycling it is important to track the results and analyze the cost savings. Some determinations must be made prior to implementing this program, such as the following:

(a) Locating a waste paper vendor.

(b) Determining grades of paper to be collected, i.e., develop specific product descriptions.

(c) How much of the product is required for pick-up?

(d) Is the vendor going to be responsible for destroying confidential materials or must it be shredded prior to delivery to the recycler?

(e) Is it necessary to know the allowable level of contamination? (Since anything other than the specified grade of paper to be purchased is a contaminant)?

(f) Appropriately labeled collection containers must be strategically placed and located for ease of deposit and collection operations.

(g) Fire safety is a concern. Using all steel recycling containers (which are themselves recyclable) or other National Fire Protection Association (NFPA) rated containers is recommended and/or required.

c. **Plastic**

(1) The Plastic Bottle Institute, in cooperation with its member companies, established a nationally recognized voluntary material identification system to assist separators of plastic bottles and create a higher value for recycled material. This Plastic Container Code System is beneficial largely because of the uniformity it offers to bottle manufacturers and recyclers alike.

(2) Bottles are coded by the most widely used resins. The code is located on the bottom of the bottle or container. High Density Polyethylene (HDPE) plastic containers such as milk jugs, water bottles, laundry detergent bottles and automotive oil bottles are marketable if collected in adequate quantity and densified.

(3) The medical center may not be able to generate adequate quantity to make it monetarily worth the time and effort. ***NOTE:*** *The reason minimal efforts in many states have been directed at HDPE recycling is that the light and voluminous nature of plastic containers makes collection costly in relation to tonnages recovered.* However, markets for HDPE plastic do exist. ***NOTE:*** *See Appendix A for a definition of the different types of plastic and their recycling codes. See Appendix B for polystyrene information.*

d. **Other Waste Products**

(1) Consideration must be given to market research, planning, resource allocation, organization, monitoring and feedback when accomplishing the recycling of any material. ***NOTE:*** *Refer to the Annual Waste Minimization Survey Results for a listing of other wastes which may possibly be recyclable at the facility.*

(2) In expanding the recycling base it may be within the scope of the recycling program to create a Drive-up Recycling Center for batteries, newspaper, aluminum cans, clear and colored glass products, etc. ***NOTE:*** *See Appendix F for information on battery recycling.*

(a) This will provide the medical center community an opportunity to recycle products from home that may be going to the landfill.

(b) It is an opportunity to present a positive image and to say to the community "We care about our community and are working with you to protect our environment."

8. BALERS

a. There are two basic types of balers, vertical and horizontal, and they come in a variety of sizes ranging from small portable ones to very large stationary ones. The corrugated bale size produced by these machines ranges in size from 75 to 2,000 pounds depending on the size of the baler.

(1) A vertical baler is less expensive (generally less than $14,000), takes up less floor space and can be used by facilities generating less than 8 tons per week of corrugated waste, or for a consolidated effort among several medical centers.

(2) Horizontal balers cost more (between $10,000 to $75,000 for single ram and up to $225,000 for double ram), take up more floor space and are recommended for facilities generating more than 8 tons/week of corrugated. Horizontal balers are usually designed for high volume, continuous feed operations and would probably not be applicable except in the case of a regional VHA cooperative.

b. Both vertical and horizontal balers are designed for corrugated waste, but can sometimes be used for other recyclables such as aluminum cans, plastic wrap, and office paper. Office paper and newspaper are usually dense enough and do not require densification. Newspaper, computer paper, and plastic milk jugs can only be baled if they are fluffed, shredded, or perforated with another piece of specialized equipment before baling.

THE DIFFERENT TYPES OF PLASTICS

1. **CODE 1. Polyethylene Terephtalate (PET).** PET has the properties of clarity, toughness and barrier (the ability to maintain carbon dioxide). PET is the fastest growing plastic used in household applications. The predominant use of PET is to package soft drinks, but it is also used for some edible-oil bottles, liquor bottles and peanut butter jars. PET represents about 25 percent of the plastics bottle market.

2. **CODE 2**. **High Density Polyethylene (HDPE).** HDPE is characterized by its stiffness, low cost, ease of forming and resistance to breakage. It represents over 50 percent of the plastic bottle market. HDPE has a variety of uses such as milk, water and juice beverage bottles, bleach and detergent bottles, motor oil bottles, margarine tubs and some grocery sacks.

3. **CODE 3. Polyvinyl Chloride (PVC).** PVC is the most versatile of all plastics because of its blending capability. It can be used to manufacture products ranging from heavy walled pressure pipe to crystal-clear food packaging. PVC packages are used for window cleaners, some water and edible-oil bottles and some detergent powders. PVC has the properties of good clarity and chemical resistance (which is important for holding household detergents and other harsh materials). PVC bottles make up less than 6 percent of plastic bottles typically found in the household.

4. **CODE 4. Low Density Polyethylene (LDPE).** LDPE is widely used in applications requiring clarity, inertness, processing ease and moisture barrier. Its largest end use is as film for bags (e.g., bread bags or trash bags).

5. **CODE 5. Polypropylene (PP).** PP is a polymer with low specific gravity and good resistance to chemicals and fatigue. It has gained wide acceptance in applications ranging from fibers and films to food packaging such as screw-on caps and lids, yogurt and margarine tubs, syrup bottles and straws.

6. **CODE 6. Polystyrene (PS).** PS is a versatile resin with a wide range of physical properties including: clarity, ability to foam and relative waste of processing. It is the least used plastic for household packaging. Some typical applications are yogurt cups, egg cartons, meat trays, disposable drink cups, plates and cutlery and foam coffee cups.

7. **CODE 7. Other Plastics**. These may include resins not mentioned in the preceding or containers made of more than one resin type. Included in this category are some squeezable syrup and catsup bottles and some microwave food trays.

THE DIFFERENT TYPES OF POLYSTYRENE

1. **Extruded Polystyrene Foam.** Extruded polystyrene foam is made from polystyrene resin pellets that are heated and mixed with a blowing agent to create a flat sheet of plastic with a cellular structure. The foamed extruded sheet is over 95 percent air. The foamed sheet is reheated and thermoformed into finished shapes. This process is commonly used for plates, trays, bowls, and hinged lid containers, including hamburger "clamshells." Adding coloring determines the products' final color.

2. **Expandable Bead Polystyrene Foam.** Expandable bead polystyrene is made from polystyrene resin granules impregnated with a blowing agent. After a steamed pre-expansion process that produces foamed beads, the beads are put into a mold again and heated with steam where they expand further until they fuse together, forming the finished product. Foaming also gives the material a natural white color. Again, the finished product is approximately 95 to 98 percent air. This process is used for hot beverage and soup containers, as well as shape molded packaging such as electronic packaging.

3. **Extruded Solid Polystyrene (oriented polystyrene sheet).** Extruded polystyrene or OPS is made from polystyrene resin pellets without a blowing agent mixed in. The sheet is reheated and thermoformed into various shapes. When no coloring is added, transparent products are produced. The material thickness of products produced in this manner is typically thinner than that made with blowing agents, but the products themselves may be heavier than comparable foamed products. This process is used for clear covers, cold drink cups and clear salad containers.

4. **Injection Molded Polystyrene.** Injection molded polystyrene products are made from resin pellets that are heated without a blowing agent and injected into a mold. Again, coloring can be added to determine the product's final color. In general, if polystyrene contains no rubber additives, it forms naturally transparent items. If the polystyrene does contain rubber, then the finished products will be translucent or opaque with a milky white appearance.

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5. Promoting Source Reduction and Recyclability in the Marketplace, EPA, No. 530-SW-89-066, September 1989.

6. Developing a Comprehensive Federal Office Recycling Program, EPA, No. PM-215.

7. Recycling Works!, EPA, No. 530-SW-89-014, January 1989.

8. Reusable News, EPA, No. 530-SW-91-020, published quarterly.

NOTE: *For more information about recycling and for additional copies of Recycling Works!, call the EPA Solid Waste Hotline at 1.800.424.9346. In Washington, DC, call 382.3000.*

STATE RECYCLING OFFICES

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Department of Environmental Management
Solid Waste Division
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Montgomery, AL 36130
(205) 271-7700

ALASKA
Department of Environmental Conservation
Solid Waste Program
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ARIZONA
Department of Environmental Quality O.W.P.
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ARKANSAS
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8001 National Drive
Little Rock, AR 72219
(501) 562-7444

CALIFORNIA
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Department of Conservation
819 19th St.
Sacramento, CA 95614
(916) 323-3743

COLORADO
Department of Health
4210 E 11th Avenue
Denver, CO 80220
(303) 320-4830

CONNECTICUT
Recycling Program Department of Environmental Protection
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DELAWARE
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89 Kings Highway
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(302) 736-4794

DISTRICT OF COLUMBIA
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IDAHO
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Lincoln, NE 68509
(402) 471-4210

NEVADA
Energy Extension Service
Office of Community Service
1100 S. Williams Street
Carson City, NV
(702) 885-4420

NEW HAMPSHIRE
Waste Management Division
Department of Environmental Services
6 Hazen Drive
Concord, NH 03301
(603) 271-2900

NEW JERSEY
Office of Recycling
Department of Environmental Protection
CN 414
401 E. State Street
Trenton, NJ 08625
(609) 292-0331

NEW MEXICO
Solid Waste Section
Environmental Improvement Division
1190 St. Francis Drive
Santa Fe, NM 87503
(505) 457-2780

NEW YORK
Bureau of Waste Reduction and Recycling
Department of Environmental Conservation
50 Wolf Road, Room 208
Albany, NY 12233
(518) 457-7337

NORTH CAROLINA
Solid Waste Management Branch
Department of Human Resources
P.O. Box 2091
Raleigh, NC 27602
(919) 733-0692

NORTH DAKOTA
Division of Waste Management
Department of Health
1200 Missouri Ave., Rm. 302
Box 5520
Bismarck, ND 58502-5520
(701) 224-2366

OHIO
Division of Litter Prevention and Recycling
Ohio EPA
Fountain Square Bldg. E-1
Columbus, OH 43224
(614) 265-7061

OKLAHOMA
Solid Waste Division
Department of Health
1000 N.E. 10th Street
Oklahoma City, OK 73152
(405) 271-7159

OREGON
Department of Environmental Quality
811 S.W. Sixth
Portland, OR 97204
(503) 229-5913

PENNSYLVANIA
Waste Reduction and Recycling Section
Division of Waste Minimization and Planning
Department of Environmental Resources
P.O. Box 2063
Harrisburg, PA 17120
(717) 787-7382

RHODE ISLAND
Office of Environmental Coordination
Department of Environmental Management
83 Park Street
Providence, RI 02903
(401) 277-0434

SOUTH CAROLINA
Department of Health and
Environmental Control
2600 Bull Street
Columbia, SC 29201
(803) 734-5200

SOUTH DAKOTA
Energy Office
217-1/2 West Missouri
Pierre, SD 57501
(605) 773-3603

TENNESSEE
Department of Public Health
Division of Solid Waste Management
Customs House, 4th Floor
701 Broadway
Nashville, TN 37219-5403
(615) 741-3424

TEXAS
Division of Solid Waste Management
Department of Health
1100 W. 49th Street
Austin, TX 78756
(512) 458-7271

UTAH
Bureau of Solid and Hazardous Waste
Department of Environmental Health
P.O. Box 16690
Salt Lake City, UT 84116-0690
(801) 538-6170

VERMONT
Agency of National Resources
103 S. Main Street, West Building
Waterbury, VT 05676
(802) 244-8702

WASTE RECOVERY ASSOCIATIONS

Aluminum Association
900 19th Street, NW, Suite 300
Washington, DC 20006
Phone: (202) 862-5100
Fax: (202) 862-5164
Web Site: http://www.aluminum.org/recyindx.htm

Aluminum Recycling Association
1000 16th Street, NW, Suite 603
Washington, DC 20036
Phone: (202) 785-0951
Fax: (202) 785-0210

American Forest and Paper Association
1111 19th Street, NW
Washington, DC 20036
Phone: (202) 463-2700
Fax: (202) 436-2785
Web Site: http://www.afandpa.org/index.html

American Foundrymen's Society
505 State Street
Des Plaines, IL 60016
Phone: (874) 824-0181
Fax: (874) 824-7848
Web Site: http://www.moderncasting.com/

American Iron and Steel Institute
1101 17th Street, NW, Suite 1300
Washington, DC 20036
Phone: (202) 452-7100
Fax: (202) 463-6573
Web Site: http://www.steel.org/

American Legislative Exchange ncil
910 17th Street, NW, Fifth Floor
Washington, DC 20006
Phone: (202) 466-3800
Fax: (202) 466-3801
Web Site: http://www.alec.org/

American Plastics Council
1801 K Street, NW, Suite 701L
Washington, DC 20006
Phone: 800.2 HELP-90
Fax: (202) 296-7119
Web Site: http://www.plasticsresource.org

American Public Works Association
for Solid Waste Institute
2345 Grand Blvd., Suite 500
Kansas City, MO 64108
Phone: (816) 472-6100
Fax: (816) 472-1610

Alliance of Foam Packaging Recyclers
2124 Priest Bridge Dr., Suite 19
Crofton, MD 21114
Phone: (410) 451-8340
Fax: (410) 451-8343
Web Site: http://www.epspackaging.org/

Appliance Recycling Information Center
701 Pennsylvania Ave., NW, Suite 900
Washington, DC 20004
Phone: (202) 434-7492
Fax: (202) 434-7400

Asphalt Recycling and Reclaiming Association
3 Church Circle, Suite 250
Annapolis, MD 21401
Phone: (410) 267-0023
Fax: (410) 267-7546
Web Site: http://rampages.onramp.net/`prime/arra.htm

Association of Petroleum Re-Refiners
P.O. Box 548
Buffalo, NY 14231-0584
Phone: (718) 631-8246
Fax: Prompt 33

Association of Post Consumer Plastics Recyclers
285 Central Street, Suite 201
Leominster, MA 01453
Phone: (508) 840-2692
Fax: (508) 537-8514

Association of State and Territorial Solid Waste Management Officials
444 North Capitol Street, NW, Suite 315
Washington, DC 20001
Phone: (202) 624-5828
Fax: (202) 642-7875

Automotive Recyclers Association
3975 Fair Ridge Drive, Suite 20
Fairfax, VA 22033-2906
Phone: (703) 385-1001
Fax: (703) 385-1494

Battery Council International
401 N Michigan Avenue
Chicago, IL 60611
Phone: (312) 644-6610
Fax: (312) 321-6869

Browning-Ferris Industries Headquarters
757 N Eldridge at Memorial
Houston, TX 77079
Phone: (713) 870-8100
Web Site: http://www.bfi.com/

Bral Environmental Service
P.O. Box 24837
Kansas City, MO 64131
Phone: (816) 931-4911

Can Manufacturers Institute
1625 Massachusetts Ave., NW
Washington, DC 20036
Phone: (202) 232-4677
Fax: (202) 232-5756
Web Site: http://www.cancentral.com/

Center for Plastics Recycling Research
Rutgers University, Bldg., 3529
P.O. Box 1179
Piscataway, NJ 0885-1179
Phone: (732) 445-2639
Fax: (732) 932-5636

Composting Council
114 South Pitt Street
Alexandria, VA 22314
Phone: (703) 739-2401
Fax: (703) 739-2407

Container Recycling Institute
1400 16th Street, NW, Suite 210
Washington , DC 20036-2266
Phone: (202) 797-6839
Fax: (202) 797-5437
Web Site:http://www.igc.apc.org/cri/index.html

Council of State Governments
P.O. Box 11910
Lexington, KY 40578-1910
Phone: (606) 244-8000
Fax: (606) 244-8001
Web Site: http://www.csg.org/

Council for Textile Recycling
7910 Woodmont Ave, Suite 1212
Bethesda, MD 20814
Phone: (301) 656-1077
Fax: (301) 656-1079

Eco Systems Incorporated
1108 Old Thomasville Rd.
High Point, NC 27260
Phone: (910) 883-7505
Fax: (910) 882-7958

Franklin Iron & Metal Corporation
2015 East 1st Street
Dayton, OH 45403
Phone: (513) 253-8184

Fiber Box Association

Flexible Packaging Association

2850 Golf Road, Suite 412
Rolling Meadow, IL 60068
Phone: (847) 364-9600
Fax: (847) 364-9639

1090 Vermont Ave., NW, Suite 500
Washington, DC 20005-4690
Phone: (202) 842-3880
Fax: (202) 842-3841

Glass Packaging Institute
1627 K Street, NW, Suite 800
Washington, DC 20006
Phone: (202) 887-4850
Fax: (202) 785-5377
Web Site: http://www.gpi.org/

Grocery Manufacturers of America
1010 Wisconsin Ave., NW, Suite 900
Washington, DC 20007
Phone: (202) 337-9400
Fax: (202) 337-4508
Web Site: http://www.gmabrands.com/

Institute of Packaging Professionals
481 Carlisle Drive
Herndon, VA 20170
Phone: (703) 318-8970
Fax: (703) 814-4961
Web Site: http://www.cgi.umr.edu/`asem/iopp.htm

Institute of Scrap Recycling Industries
1325 G Street, NW, Suite 1000
Washington, DC 20005-3104
Phone: (202) 737-1770
Fax: (202) 626-0900

Integrated Waste Services Association
1401 H Street, NW, Suite 220
Washington, DC 20005
Phone: (202) 467-6240
Fax: (202) 467-6225
Web Site: http://solstice.crest.org/renewables/eerg/iwsa.html

International Cartridge Recycling Association
P.O. Box 2411
Norcross, GA 30091-2411
Phone: (800) 716-4272
Fax: (770) 279-9522

International City/Council Management Association
777 North Capitol Street, NE, Suite 500
Washington, DC 20002-4201
Phone: (202) 962-3596
Fax: (202) 962-3500
Web Site: http://www.ncl.org/anr/partners/intccman.htm

International Tire and Rubber Association
P.O. Box 37203
Louisville, KY 40233-7203
Phone: 502.968.8900
Fax: (502) 964-7859

Investment Recovery Association
30200 Detroit Road
Cleveland, OH 44145-1967
Phone: (913) 262-4597
Fax: (913) 262-0174
Web Site: http://www.invrecovery.org/

Lead Industries Association
295 Madison Avenue
New York, NY 10017
Phone: (212) 578-4750
Fax: (212) 684-7714
Web Site: http://www.leadinfo.com/index.htm

NMTBA- The Association for Manufacturing Technology

National Association of Chemical
1200 G Street, NW, Suite 800

7901 Westpark Drive
McLean, VA 22102-4269
Phone: (703) 893-2900
Fax: (703) 893-1151
Web Site: http://members.ncms.org/AMT.html

Washington, DC 20005
Phone: (202) 296-1725
Fax: (202) 434-8741
Web Site: http://bismark.com/nac/nacr.html

National Association of Counties
440 First Street, NW
Washington, DC 20001
Phone: (202) 393-6226
Fax: (202) 737-0480

National Association of Diaper Services
994 Old Eagle School Road, Suite 1019
Wayne, PA 19087
Phone: (610) 971-4850
Fax: (610) 971-4859

National Association for Plastic Recovery
100 N Tryon Street, Suite 3770
Charlotte, NC 28202
Phone: (704) 358-8882
Fax: (704) 358-8769

National Association of Towns and Townships
1522 K Street, NW, Suite 730
Washington, DC 20005
Phone: (202) 624-3550
Fax: (202) 289-7996
Web Site: http://sso.org/natat/natat.htm

National Food Processors Association
1401 New York Ave., NW, Suite 400
Washington, DC 20005
Phone: (202) 639-5900
Fax: (202) 637-8068

National Governors' Association
444 North Capitol St., NW, 267
Washington, DC 20001-1572
Phone: (202) 624-5300
Fax: (202) 624-5313
Web Site: http://www.nga.org/

National Institute of Governmental Purchasing
11800 Sunrise Valley Drive
Reston, VA 22091
Phone: (703) 715-9400
Fax: (703) 715-9897

National League of Cities
1301 Pennsyulvania Ave., NW
Washington, DC 20004
Phone: (202) 626-3000
Fax: (202) 626-3043
Web Site: http://www.nlc.org/

National Office Paper Recycling
Conference of Mayors
1620 Eye Street, NW
Washington, DC 20005
Phone: (202) 223-3088
Fax: (202) 429-0422

National Oil Recyclers Association
12429 Cedar Road, Suite 26
Cleveland, OH 44106
Phone: (216) 791-7316
Fax: (216) 791-6047
Web Site: http://www.noraoil.com/

National Petroleum Refiners Association
1899 L Street, NW, Suite 1000
Washington, DC 20026
Phone: (202) 457-0480
Fax: (202) 457-0486

National Recycling Coalition
1727 King Street, Suite 105
Alexandria, VA 22314
Phone: (703) 683-9025
Fax: (703) 683-9026

National Renderers Association
801 N Fairfax Street, Suite 207
Alexandria, VA 22314
Phone: (703) 683-0155
Fax: (703) 683-2626

National Soft Drink Association
1101 16th Street, NW
Washington, DC 20036
Phone: (202) 463-6732
Fax: (202) 463-8172
Web Site: http://www.nsda.org/home.html

National Solid Waste Management Association
4301 Connecticut Ave., NW
Washington, DC 20008
Phone: (202) 244-4700
Fax: (202) 966-4818
Web Site: http://www.envasns.org/nswma/

National Tire Dealers and Retreaders Association
1250 I Street, NW, Suite 400
Washington, DC 20005
Phone: (202) 789-2300
Fax: (202) 682-3999

Newspaper Association of America
1921 Gallows Rd., Suite 600
Vienna, VA 22182
Phone: (703) 902-1600
Fax: (703) 917-0636
Web Site: http://www.naa.org/index_java.html

Paper Stock Institute of America
1627 K Street, NW, Suite 2105
Washington, DC 20006
Phone: (202) 466-4050
Fax: (202) 775-9109

Paperboard Packaging Council
888 17th St., NW, Suite900
Washington, DC 20006
Phone: (202) 289-4100
Fax: (202) 289-4243

Plastic Bag Information Clearinghouse
1817 E Carson Street
Pittsburgh, PA 15203
Phone: (800) 438-5856
Fax: (412) 381-8890
Web Site: http://www.plasticbag.com/

Plastic Lumber Trade Association
c/o Plastic Lumber Company
540 S Main Street, Bldg. 7
Akron, OH 44311-1023
Phone: (216) 762-8989
Fax: (216) 762-1613

Polystyrene Packaging Council
1025 Connecticut Ave., NW, 515
Washington, DC 20036
Phone: (202) 822-6424
Fax: (202) 331-0538
Web Site: http://www.polystyrene.org/

Polyurethane's Recycle and Recovery Council
355 Lexington Avenue
New York, NY 10017
Phone: (212) 351-5422
Fax: (212) 697-0409

Portable Rechargeable Battery Association
1000 Parkwood Circle, Suite 430
Atlanta, GA 30339
Phone: (770) 612-8826
Fax: (770) 612-8841

Reynolds Metals Company
6601 West Broad Street
Richmond, VA 23230
Phone: (804) 281-2000
Web Site: http://www.rmc.com

Rumpke Recycling Inc.
1300 East Monument Avenue
Dayton, OH 45402
Phone: (513) 220-9058

Rubber Manufacturers Association
1400 K Street, NW, Suite 900
Washington, DC 20005
Phone: (202) 682-4800
Fax: (202) 682-4854
Web Site: http://www.rma.org/

Scrap Tire Management Council
1400 K Street, NW, Suite 900
Washington, DC 20005
Phone: (202) 408-7781
Fax: (202) 682-4854

Secondary Materials and Recycled Textiles Association (SMART)
7910 Woodmont Avenue, Suite 1212
Bethesda, MD 20810
Phone: (310) 656-1077
Fax: (310) 656-1079
Web Site: http://www.smartasn.org/

Society of Plastics Engineers
14 Fairfield Drive
Brookfield Center, CT 06804-0403
Phone: (203) 775-0471
Fax: (203) 775-8490
Web Site: http://www.4spe.org/MAIN.HTML

Society of the Plastics Industry
1801 K St., NW, Suite 600K
Washington, DC 20006
Phone: (202) 974-5200
Fax: (202) 296-7005
Web Site: http://www.socplas.org/

Solid Waste Association of North America
P.O. Box 7219
Silver Spring, MD 20910-7219
Phone: (301) 585-2898
Fax: (301) 589-7068
Web Site: http://www.swana.org/

Steel Recycling Institute
680 Anderson Drive
Pittsburgh, PA 15220
Phone: (412) 922-2772
Fax: (412) 922-3213
Web Site: http://www.recycle-steel.org/

Technical Association of the Pulp
P.O. Box 105113
Atlanta, GA 30348
Phone: (770) 446-1400
Fax: (770) 446-6947
Web Site: http://www2.empiretappi.org/tappi/

Tire Retread Information Bureau
900 Weldon Grove
Pacific Grove, CA 93950
Phone: (408) 372-1917
Fax: (408) 372-9210

U.S. Chamber of Commerce
1615 H Street, NW
Washington, DC 20062
Phone: (202) 463-5331
Web Site: http://www.uschamber.org/

U.S. Conference of Mayors
1620 I Street, NW, 4th Floor
Washington, DC 20006
Phone: (202) 293-7330
Web Site: http://www.usmayors.org/

Vinyl Institute
65 Madison Avenue
Morristown, NJ 07960
Phone: (973) 898-6699
Fax: (973) 898-6633
Web Site: http://www.vinylinfo.org/ataglance.html

Waste Equipment Technology Association
1730 Rhode Island Avenue, NW, Suite 1000
Washington, DC 20036
Phone: (202) 659-4618
Fax: (202) 775-5917

Waste Management Inc.
3003 Butterfield Road
Oakbrook, IL 60521-1102
Phone: (630) 572-8896
Web Site: http://www.wmx.com/

BATTERY RECYCLING

1. The types of batteries which need to be disposed of are:

   a. Alkaline,

   b. Carbon Zinc,

   c. Lead Acid (including auto batteries and gel cells),

   d. Lithium,

   e. Mercury (Mercury Alkaline, Mercury Zinc),

   f. Nickel-Cadmium (and any other Nickel-containing batteries), and

   g. Silver Oxide.

2. Vendors who accept some, or all ,of these type batteries are:

Bethlehem Apparatus Company P.O. Box Y Hellertown, PA 18055 (610) 838-7034	Accepted: Mercury, Zinc, Alkaline, and Silver Oxide *NOT accepted: Nickel-Cadmium and Lead Acid*
General Battery 829 Parkview Blvd. Lombard, IL 60148 (708) 629-5200	Accepted: Lead Acid
Gopher Resource Corporation 3385 Highway 149 S. Eagan, MN 55121 (612) 454-3310 ext. 204	Accepted: Lead Acid including used auto batteries are accepted
Inmetco Battery Recycling Program 245 Portersville Road Ellwood City, PA 16117 (412) 758-2800	Accepted: Lithium ion batteries ***NOTE**: Lead Acid and Silver Oxide are sent to brokers (BDT and Exide*)
Mercury Refining 1218 Central Avenue Albany, NY 12205 (800) 833-3505	Accepted: Alkaline, Carbon Zinc, Lead Acid, Lithium, Mercury, Nickel-Cadmium, and Silver Oxide

3. Battery brokers are:

Exide 645 Penn Street Box 14205 Reading, PA 14612 (610) 378-0500	Lead Acid is accepted
Laidlaw 4255 Research Parkway Clarence, NY 14031 (716) 634-6794	Lithium, Alkaline, Lead Acid, Mercury, and Nickel-Cadmium
Renu International Corporation 1951 West Camelback Road Suite 230 Phoenix, AZ 85015 Phone: (602) 308-3777 or (800) 473-3778 Fax: (602) 308-4424	Lithium, Nickel-Cadmium, Nickel Metal Hydride, Alkaline, Lead Acid